



Shell Oil Products US

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February 17, 2012

Director, Air Enforcement Division
Office of Regulatory Enforcement
U.S. Environmental Protection Agency, Mail Code 2242-A
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460-0001

Subject: *United States v Equilon Enterprises, LLC*
Civil Action Number H-01-0978
Southern District of Texas entered August 21, 2001

Flaring Incident Report – January 18, 2012
Shell Oil Products US, Puget Sound Refinery

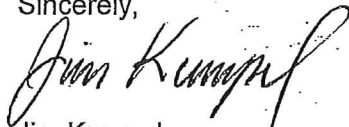
Dear Sir or Madam:

Pursuant to Section VIII, Paragraph 136 of the consent decree in *United States v Equilon Enterprises LLC*, Civil Action Number H-01-0978, entered August 21, 2001 by the United States District Court for the Southern District of Texas, Shell Oil Products US submits the following information regarding a Hydrocarbon Flaring Incident, as defined in Paragraph 120(f), that occurred at the Puget Sound Refinery. The incident was investigated and a detailed report listing the root causes is included in the attached Incident Report.

I certify under penalty of law that I have personally examined and am familiar with the information submitted herein and that I have made a diligent inquiry of those individuals immediately responsible for obtaining the information and that to the best of my knowledge and belief, the information submitted herewith is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

If you have any comments or questions regarding this information, please contact Tim Figgie at (360) 293-1525.

Sincerely,



Jim Kumpel
Technology Manager

Enclosure

PSR0000570

cc (w/enclosures):

Director, Air Enforcement Division
U.S. Environmental Protection Agency
c/o Matrix Environmental & Geotechnical Services
120 Eagle Rock Avenue, Suite 207
East Hanover, NJ 07936

Director
NWCAA
1600 South 2nd Street
Mount Vernon, WA 98273

John Keenan
Office of Air Quality (OAQ-107)
US EPA – Region 10
1200 Sixth Avenue
Seattle, WA 98101

FLARING INCIDENT REPORT

Type of Incident: ☐ Acid Gas / SWSG ☐ Tail Gas ☒ Hydrocarbon

Brief Description of Incident:

On January 18, 2012 at approximately 6 AM cold weather caused the east flare seal pot level instrument 19LC205 to freeze and generate false level indication. This caused loss of liquid level in the seal pot. The seal pot makeup water line was also frozen which prevented Operations from immediately raising the seal pot level. With no level in the seal pot, the Flare Gas Recovery (FGR) unit could not pick up the flare gas, which resulted in flaring of base load flare gas volumes. At approximately 8:10 AM, while Operations was working to unfreeze the seal pot water system, the HTU2 and ALKY2 began to experience cold weather issues that resulted in additional flare load of more than 500 lbs of SO₂. Operations was able to reestablish the east flare seal pot level at approximately 11:45 AM, which allowed the FGR system to pick-up any excess flare gases.

During the process of repairing the seal pot water system, Operations determined that the heat tracing in-place on that system was turned off. This equipment was newly installed in October of 2011 to improve level control on the seal pot and the heat tracing was not turned on after the work was completed.

To prevent a reoccurrence of this event additional freeze protection reviews will be added to PSR's current winterization inspection schedule. PSR maintains a list of equipment that is susceptible to freezing and that equipment is field checked every August to ensure proper freeze protection is in-place for the upcoming winter. Because the new seal pot equipment was being installed during the August winterization checks, it was not identified as needing attention. Therefore, to prevent a reoccurrence of this type of event, PSR will automate scheduling of additional winterization rechecks in November to ensure all freeze protection systems are working as designed.

The SO₂ limit of 1000-ppm corrected to 7% excess air was not exceeded.

Incident Start Date:	1/18/2012	Incident Start Time:	6 AM
Incident End Date:	1/18/2012	Incident End Time:	11:45 AM

Estimated Sulfur Dioxide Emissions: (Attach below):	115	Pounds
SO ₂ lbs/hr = 0.995*(flare gas flow, MSCFH * 1000) * (Sulfur, vol% / 100) * (64.0648/379), where 0.995 is flare efficiency, 64 #/#-mole is the MW of SO ₂ and 379 is scf/#-mole		

Steps taken to limit the duration and/or quantity of sulfur dioxide emissions:

Plant resources immediately began to thaw the frozen systems to reestablish level in the flare seal pot.

ANALYSIS OF INCIDENT AND CORRECTIVE ACTIONS

No additional information attached

Primary and contributing causes of incident:

The root cause of this event was steam tracing on the east flare seal pot equipment was not turned on. When cold weather hit the area the seal pot equipment froze causing a loss of level in the seal pot, which resulted in excess flaring.

Analyses of measures available to reduce likelihood of recurrence (evaluate possible design, operational, and maintenance changes; discuss alternatives, probable effectiveness, and cost; determine if an outside consultant should be retained to assist with analyses):

To prevent a reoccurrence of this event additional freeze protection reviews will be conducted. Shell PSR maintains a list of equipment that is susceptible to freezing. The equipment on this list is field checked every August to ensure proper freeze protection is in-place for the upcoming winter. Because the new seal pot equipment was being installed during the August winterization checks, it was not identified as needing attention. Therefore, to prevent a reoccurrence of this type of event, PSR will automate scheduling of additional winterization rechecks in November to ensure all freeze protection systems are working as designed.

Description of corrective action to be taken (include commencement and completion dates):

See above.

If correction not required, explain basis for conclusion:

See above.

The incident was the result of or resulted in the following (check all that apply):

- ☐ Error from careless operation
- ☒ Equipment failure due to failure to operate and maintain in accordance with good engineering practice
- ☒ Sulfur dioxide emissions greater than 20 #/hr continuously for three or more consecutive hours
- ☐ Caused the number of Acid Gas or Tail Gas incidents in a rolling twelve-month period to exceed five
- ☐ None of the above

Was the root cause identified as a process problem isolated within an SRP?

- ☐ Yes (An optimization study of the affected SRP is required as part of the corrective actions identified above.)
- ☒ No

The root cause of the incident was:

- ☐ Identified for the first time since March 21, 2001
- ☒ Identified as a recurrence since March 21, 2001 (explain previous incident(s) below)

On December 18, 2008 a similar event occurred - cold weather froze some flare seal pot instrumentation that caused flaring of more than 500 lbs of SO₂.

Was the root cause of the incident a malfunction?

- ☐ Yes (describe below)
- ☐ No

Definition of Malfunction: Any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or failure of a process to operate in a normal or usual manner. Failures that are caused in part by poor maintenance or careless operation are not malfunctions.

REPORTING REQUIREMENTS

Submit initial report, supporting documents and assessment of stipulated penalties, if any, within 30 days of the incident to the EPA Regional Office and Northwest Clean Air Agency.

If at the time the first report is submitted (within 30 days of the incident), corrective actions have not been determined a follow-up report is required within 45 days of first report (unless otherwise approved by the EPA). Provide anticipated date of follow-up report.

Stipulated penalties do not apply to hydrocarbon flaring events.

Prepared By: _____ Jason Smolsnik _____ Date: _____ January 19, 2012 _____